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Mr. Michael Ribordy
USEPA Region 5
77 West Jackson Boulevard (SE-5J)
Chicago, IL 60604-3590

SEDIMENTS

Subject:
Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site
Time-Critical Removal Action – Former Plainwell Impoundment
Groundwater Monitoring Well Installation Plan

Date:
March 4, 2009

Contact:
Doug Cowin

Phone:
312.332.4937x11

Email:
Doug.Cowin@
arcadis-us.com

Our ref:
B0064530.0000.00675

Dear Mike:

In accordance with the approved Time-Critical Removal Action Design Report (Design Report) (2007) and the Area 1 Supplemental Remediation and Feasibility Study (SRI/FS) Work Plan (2007), the Kalamazoo River Study Group (KRSG) is to install fifteen groundwater monitoring wells at the former Plainwell Impoundment in Allegan County, Michigan. This letter documents agreements among the U.S. Environmental Protection Agency (USEPA), the Michigan Department of Environmental Quality (MDEQ), and the Kalamazoo River Study Group (KRSG) regarding the monitoring well construction program at the former Plainwell Impoundment during our conference call on March 2, 2009.

Per our discussion, the monitoring wells will be constructed as described in the Design Report, with the following modifications regarding well locations and design:

- Well locations – In response to MDEQ's request, monitoring wells MW-3, MW-6, MW-7, and MW-8 will be moved closer to the river and installed within the excavated area at the locations shown on attached Figure 1. Monitoring well MW-12 will be installed several feet closer to the river and approximately 100 ft west of the pilot boring location, and monitoring well MW-1 will be installed within the excavated area, a few feet closer to the river than the location in which the pilot boring was drilled. (We have not shown any difference in the position of MW-1 on the well location map because the small distance we will move it would not cause us to change where it is plotted on the map.)

- Well design – At locations in which the water table intersects the surficial silt/clay unit (expected at MW-1, MW-2, MW-6, MW-11, and possibly MW-3,

US EPA RECORDS CENTER REGION 5
406980

MW-7, MW-8, and MW-12), the top of the well screen will be set approximately 6 inches below the interface of the silt/clay and sand units, and the top of the filter pack will be set approximately at the same elevation as that interface.

At locations in which the water table lies within the sand unit, the top of the well screen will be placed approximately 6 inches above the water table.

The attached logs provide our current understanding of the well specifications for locations where pilot boring information is available. Per agreement with the USEPA and MDEQ, where monitoring wells are to be installed at new locations, information from new pilot borings will be used to design the wells, in consultation with the USEPA and MDEQ.

- Well screens – All well screens will be 5 ft in length and constructed of v-wire wrapped Type 304 stainless steel.

- Filter pack – At the discretion of the field geologist, fine-grained (e.g., 00-grade) sand will be used only in constructing the filter pack material above the top of the screen and below the bottom of the bentonite seal.

- Well development – The monitoring wells will be developed either using an appropriately equipped drill rig, or using a Waterra mechanical pump and surge block apparatus following a protocol in which each 1 ft section of the well screen is developed for a minimum period of 15 minutes.

- Staff gages – Water levels in the river will be measured at the upstream end (at staff gage SG-1), the downstream end (at SG-4), and approximately at the mid-point (at SG-5) of the former impoundment on the first and last day of quarterly groundwater sampling.

- Groundwater sampling – The monitoring wells will be sampled on a quarterly basis only after it has been confirmed through monitoring of groundwater and surface water elevations that a gradient exists in which groundwater is traveling toward the river for a minimum period of two weeks.

- Surface water sampling - Surface water grab samples will be collected from the river within the former impoundment on the first day and last day of the quarterly groundwater sampling activity and analyzed for the same laboratory

parameters for which the groundwater samples are analyzed: PCBs, total organic carbon, total dissolved solids, total suspended solids, chloride, sulfate, alkalinity, sodium, potassium, magnesium, and calcium.

Based on the current schedule, we anticipate well development will occur during the week of March 23, followed by collection of the first groundwater samples as soon as the week of March 30, pending the results of water elevation monitoring. If you have any questions or wish to discuss the well installation program further, please do not hesitate to contact me at 312.332.4937 x 11.

Sincerely,

ARCADIS

Douglas K. Cowin
Associate Vice President

Attachments (2)

Copies:
Samuel Borries, USEPA
Paul Bucholtz, MDEQ
James Saric, USEPA
Jeff Keiser, CH2M Hill
J. Michael Davis, Esq., Georgia-Pacific LLC
Gary Griffith, Georgia-Pacific LLC
L. Chase Fortenberry, P.E., Georgia-Pacific LLC
Michael Erickson, P.E., ARCADIS

dkc/DKC

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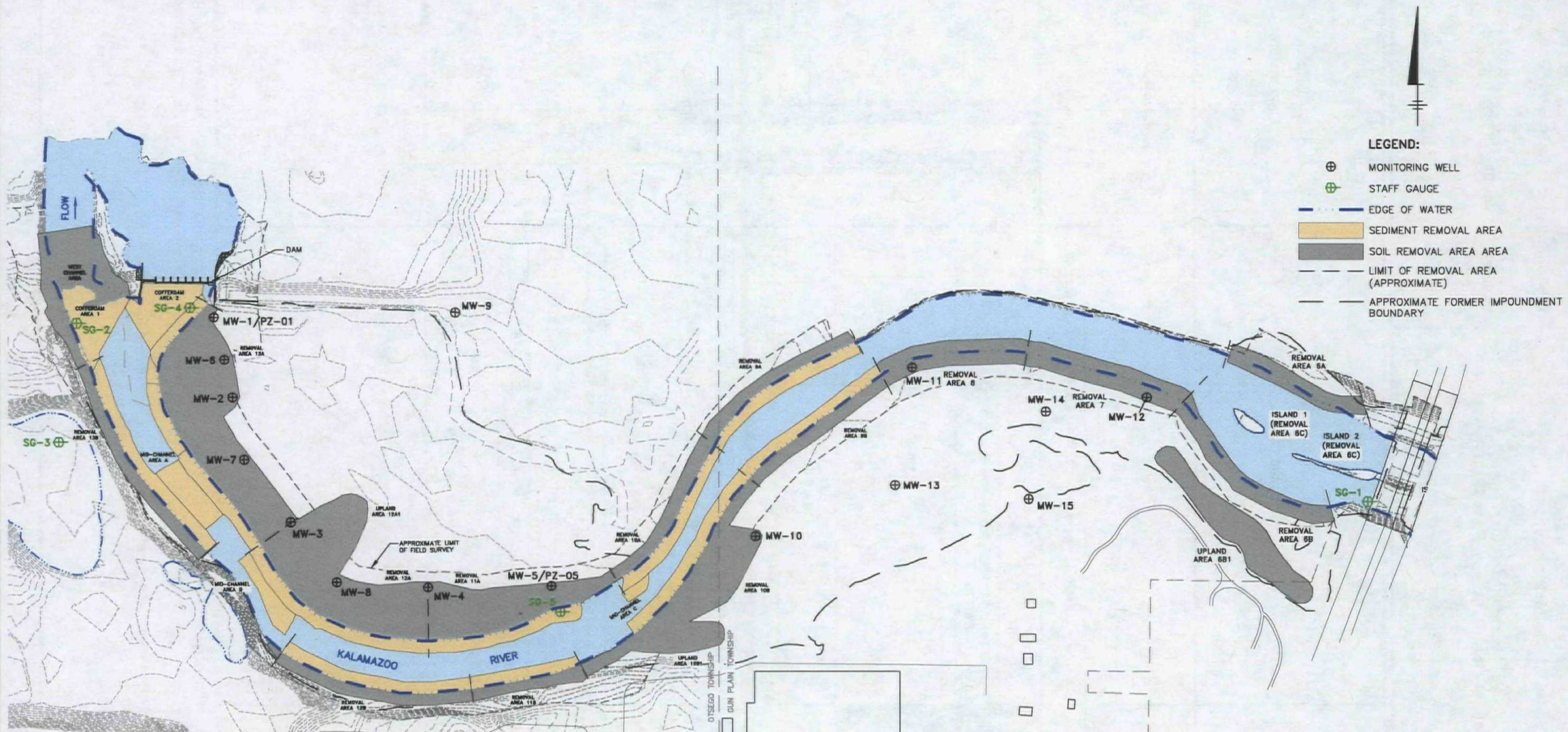
Attachments



NOTE:

1. BASE MAP BASED ONBASEMAP TOPOGRAPHY WITHIN "APPROXIMATE LIMIT OF FIELD SURVEY" IS BASED ON FIELD SURVEY POINT DATA OBTAINED BY BBL IN SEPTEMBER 2003, AND PREIN & NEWHOF IN JULY, AUGUST, AND SEPTEMBER 2006. VERTICAL DATUM FOR ALL FIELD SURVEYS AND BENCHMARKS IS NGVD 29. LIMITS OF INDIVIDUAL FIELD SURVEYS ARE NOT SHOWN FOR CLARITY. SOME INTERPOLATION MAY EXIST BETWEEN INDIVIDUAL FIELD SURVEYS. BASEMAP TOPOGRAPHY OUTSIDE "APPROXIMATE LIMIT OF FIELD SURVEY" IS BASED ON CONTOUR INFORMATION OBTAINED FROM THE ALLEGAN COUNTY GIS DATABASE, DATED APRIL 2004. VERTICAL DATUM FOR AERIAL BASEMAP TOPOGRAPHY IS NAVD 88. CONVERSION BETWEEN VERTICAL DATUMS WITHIN VICINITY OF PROJECT SITE IS AS FOLLOWS: [NAVD 88] + 0.44 FT = [NGVD 29]. ALL ELEVATIONS SHOWN ARE IN FEET. HORIZONTAL DATUM FOR ALL SURVEY INFORMATION (I.E., FIELD AND AERIAL) IS STATE PLANE, NAD 83, MICHIGAN SOUTH ZONE (2113), INTERNATIONAL FEET

KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC. /PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE
PLAINWELL TCRA GROUNDWATER MONITORING

GROUNDWATER MONITORING WELL LOCATION MAP

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FIGURE 1

Date Start/Finish: 11/13/2008
Drilling Company: MATECO
Driller's Name: Gary Swift, John Olson
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" ID
Rig Type: CME-55
Sampling Method: 2" x 2' Split Spoon

Northing: 350957.1
Easting: 12772453.2
Casing Elevation: NA

Borehole Depth: 24' bgs
Surface Elevation: 708.0 ft AMSL

Descriptions By: Ron Kuhn

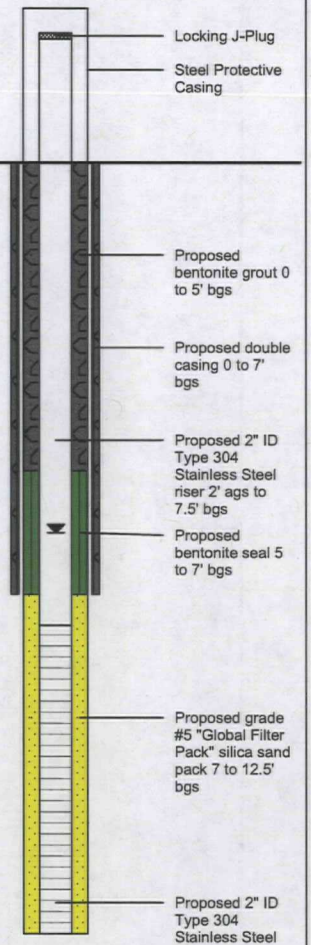
Well/Boring ID: **MW-01 Proposed**

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
	710								
									Clean fill may be placed over existing ground surface based on field geologist discretion.
0									
		1	0-2	1.2	4 4 3 2	7	NA		Gray-brown Silty fine SAND, trace medium to coarse Sand, trace fine Gravel (road base). Orange-brown Silty fine SAND, trace medium to coarse Sand, trace fine to medium Gravel, dry.
		2	2-4	1.0	2 2 2 3	4	NA		Gray-brown Silty CLAY, trace Organics, damp.
	705								
5		3	4-6	0.0	2 2 2 2	4	NA		No recovery using either 2" and 3" split spoon.
		4	6-8	1.2	WOH 2 3 5	5	NA		Dark brown organic Clayey SILT, little fine Sand, moist. Gray-brown fine SAND, trace Silt, loose, saturated.
	700								
10		5	8-10	0.8	3 5 8 10	13	NA		Olive-brown fine to medium GRAVEL, little fine Sand, trace medium to coarse Sand, trace Silt, saturated.
		6	10-12	0.4	5 8 12 9	20	NA		Gray-brown fine to medium GRAVEL, trace fine to coarse Sand, saturated.
	695	7	12-14	0.7	10 8 5 5	13	NA		Dark gray fine to coarse SAND and fine to medium GRAVEL, saturated.
15		8	14-16	0.3	5 5 8 8	13	NA		

Well/Boring Construction



Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer.

Proposed well construction is shown for review.

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Client: Kalamazoo River Study Group

Well/Boring ID: **MW-01 Proposed**

Site Location:
Plainwell, Michigan

Borehole Depth: 24' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		9	16-18	0.3	2 5 2 5	7	NA		Dark gray fine to medium GRAVEL, trace fine to coarse Sand, saturated.	
	690	10	18-20	0.6	2 3 5 5	8	NA			
20		11	20-22	0.0	5 7 8 11	15	NA		No recovery.	
	685	12	22-24	0.5	7 7 7 7	14	NA		Gray-brown fine to medium GRAVEL, little fine to coarse Sand, trace Silt, loose, saturated.	
25										
	680									
30										
	675									
35										

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Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer.

Proposed well construction is shown for review.

Date Start/Finish: 11/13/2008
Drilling Company: MATECO
Driller's Name: Gary Swift, John Olson
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" ID
Rig Type: CME-55
Sampling Method: 2" x 2' Split Spoon

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 20' bgs
Surface Elevation: NA

Descriptions By: Ron Kuhn

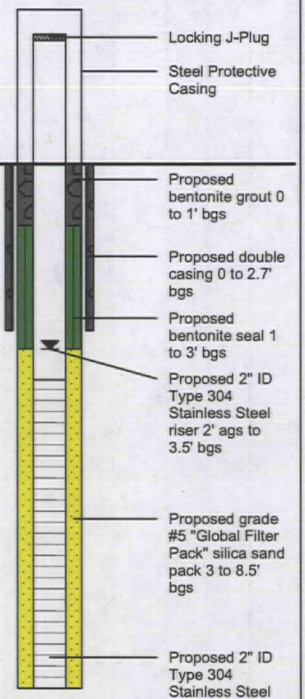
Well/Boring ID: **MW-02 Proposed**

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
									Clean fill may be placed over existing ground surface based on field geologist discretion.
0	0	1	0-2	2.0	1 1 1 1	2	NA		Dark gray-brown Silty CLAY, trace intermittent fine Sand laminations, trace Organics, moist.
		2	2-4	1.7	2 1 1 2	2	NA		Olive-brown fine SAND, trace Silt, saturated. Light gray-brown fine SAND, trace Silt, trace Shells, saturated.
5	-5	3	4-6	1.0	5 9 13 12	22	NA		Light gray-brown fine to medium SAND, little coarse Sand, little fine to medium Gravel, trace Silt, loose, saturated.
		4	6-8	0.7	5 9 11 17	20	NA		
		5	8-10	0.4	10 4 2 2	6	NA		Dark gray fine to medium GRAVEL, little fine to coarse Sand, trace Silt, saturated.
10	-10	6	10-12	0.2	3 3 5 5	8	NA		
		7	12-14	0.4	12 12 8 7	20	NA		Gray-brown fine to coarse SAND, little fine to medium Gravel, trace Silt, saturated.
15	-15	8	14-16	1.5	7 7 7 12	14	NA		Light gray-brown fine to medium SAND, trace coarse Sand, trace fine to medium Gravel, trace Silt, saturated.

Well/Boring Construction



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Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Proposed well construction is shown for review.

Client: Kalamazoo River Study Group

Well/Boring ID: **MW-02 Proposed**

Site Location:
Plainwell, Michigan

Borehole Depth: 20' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		9	16-18	1.0	7 10 12 16	22	NA		As above, grading to light gray-brown fine to medium SAND, trace Silt, saturated. Gradation change at ~16.5' bgs.	
		10	18-20	0.8	7 8 10 10	18	NA		Light gray-brown fine to medium SAND, trace fine Gravel, trace Silt, saturated.	
20	20									
25	-25									
30	-30									
35	-35									

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Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Proposed well construction is shown for review.

Date Start/Finish: 11/13/2008
Drilling Company: MATECO
Driller's Name: Gary Swift, John Olson
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" ID
Rig Type: CME-55
Sampling Method: 2" x 2' Split Spoon

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 22' bgs
Surface Elevation: NA

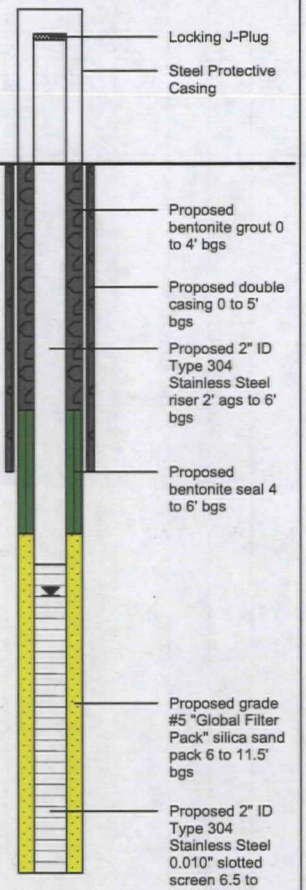
Descriptions By: Ron Kuhn

Well/Boring ID: **MW-04 Proposed**

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	1	0-2	NA	NA	NA	NA		No sampling - continuous Hollow Stem Auger through 22A stone pad.
		2	2-4	NA	NA	NA	NA		
5	-5	3	4-6	NA	NA	NA	NA		
		4	6-8	1.5	WOH WOH 1 1	1	NA		Dark gray grading to dark gray-brown fine SAND, trace Silt, loose, wet.
		5	8-10	0.6	2 2 3 3	5	NA		Light gray-brown fine to medium SAND, little coarse Sand, little fine to medium Gravel, trace Silt, little calcareous Silt/Sand-sized grains, saturated.
10	-10	6	10-12	0.5	1 1 1 13	2	NA		Light gray calcareous fine to medium SAND, little fine to medium Gravel, trace coarse Sand, trace Silt (calcareous), saturated.
		7	12-14	0.9	4 4 4 6	8	NA		Brown fine to medium GRAVEL, trace fine to coarse Sand, trace Silt, saturated.
									Orange-brown Silty CLAY, moderately stiff, moist.
15	-15	8	14-16	0.7	4 4 10 6	14	NA		Orange-brown fine to coarse SAND and fine to medium GRAVEL, trace Silt, saturated.



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Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer.

Proposed well construction is shown for review.

Client: Kalamazoo River Study Group

Well/Boring ID: **MW-04 Proposed**

Borehole Depth: 22' bgs

Site Location:
Plainwell, Michigan

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		9	16-18	0.6	6 6 8 11	14	NA		Orange-brown fine to coarse SAND and fine to medium GRAVEL, trace Silt, saturated. Dark gray fine SAND, trace Silt, saturated.	
		10	18-20	0.5	15 9 7 12	16	NA		Orange-brown fine to coarse SAND and fine to medium GRAVEL, trace Silt, saturated.	
20	-20	11	20-22	0.3	5 5 8 12	13	NA			
25	-25									
30	-30									
35	-35									

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Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer.

Proposed well construction is shown for review.

Date Start/Finish: 11/14/2008
Drilling Company: MATECO
Driller's Name: Gary Swift, John Olson
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" ID
Rig Type: CME-55
Sampling Method: 3" x 2' Split Spoon

Northing: 350153.0
Easting: 12773460.8
Casing Elevation: NA

Borehole Depth: 22' bgs
Surface Elevation: 710.9 ft AMSL

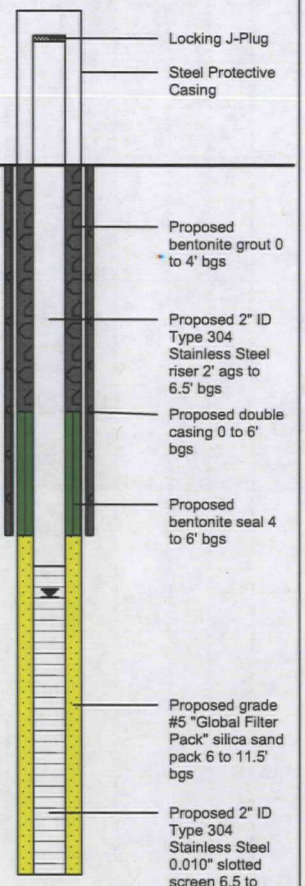
Descriptions By: Ron Kuhn

Well/Boring ID: **MW-05 Proposed**

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	710	NA	0-4	NA	NA	NA	NA		No sample - continuous auger through 22A stone pad.
5	705	1	4-6	1.0	3 1 1 1	2	NA		Gray-brown Silty CLAY, trace highly degraded Organics, damp. Gray-brown fine to medium SAND, trace Silt, trace Shells, moist. Dark gray Silty CLAY, moist. Dark gray fine SAND, trace Silt, saturated.
		2	6-8	1.1	3 1 1 1	2	NA		Olive-brown grading to light gray (calcareous) fine SAND, trace Silt, trace Shells, saturated.
10		3	8-10	0.4	7 9 10 10	19	NA		Light gray (calcareous) fine to medium SAND, little coarse Sand, trace fine to medium Gravel, trace Silt, saturated.
	700	4	10-12	1.1	4 6 9 13	15	NA		As above, includes trace coarse Gravel.
		5	12-14	1.4	23 15 10 8	25	NA		Gray-brown fine to medium SAND, trace coarse Sand, trace Silt, saturated. Gray-brown fine to coarse SAND and fine to medium GRAVEL, trace Silt, saturated. Dark gray fine to medium GRAVEL, little fine to coarse Sand, saturated.
15	695	6	14-16	0.4	7 10 10 10	20	NA		Dark gray coarse SAND and fine GRAVEL, little fine to medium Sand, saturated.



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Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.
Tried 2" split spoon for 6-8' and 8-10' bgs intervals, no recovery using 2" spoon, so used 3" split spoon for remaining intervals.

Proposed well construction is shown for review.

Client: Kalamazoo River Study Group

Well/Boring ID: **MW-05 Proposed**

Site Location:
Plainwell, Michigan

Borehole Depth: 22' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		7	16-18	0.8	5 7 8 8	15	NA		Dark gray fine to coarse SAND, little fine to medium Gravel, saturated.	
		8	18-20	0.6	6 7 6 6	13	NA		Dark gray coarse SAND and fine GRAVEL, little fine to medium Sand, trace medium Gravel, saturated.	
20	690	9	20-22	0.0	6 9 9 9	18	NA		No recovery - likely same as above.	
25	685									
30	680									
35	675									

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Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.
Tried 2" split spoon for 6-8' and 8-10' bgs intervals, no recovery using 2" spoon, so used 3" split spoon for remaining intervals.

Proposed well construction is shown for review.

Date Start/Finish: 11/17/2008
Drilling Company: MATECO
Driller's Name: Gary Swift, Rob Merlington
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" ID
Rig Type: CME-55
Sampling Method: 2" x 2' Split Spoon

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 26' bgs
Surface Elevation: NA

Descriptions By: Ron Kuhn

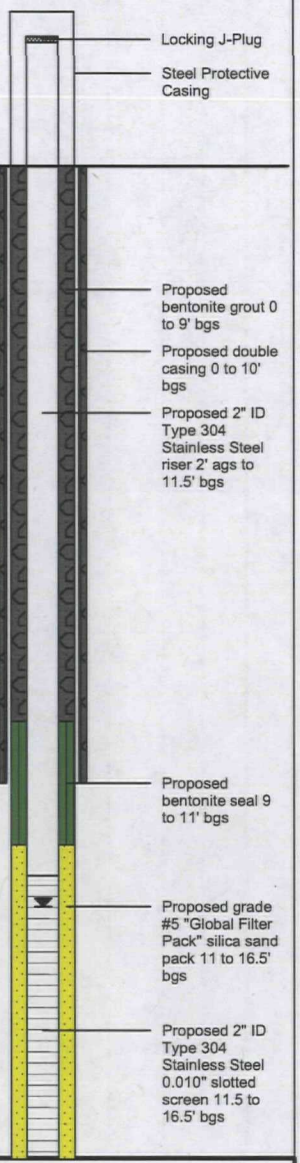
Well/Boring ID: **MW-09 Proposed**

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	1	0-2	0.6	2 2 2 3	4	NA		Brown Sandy Organic SILT, trace Organics (Roots, Wood), tree Root in tip of sample, damp.
		2	2-4	1.0	2 2 2 2	4	NA		Dark orange-brown fine SAND, trace medium to coarse Sand, trace fine Gravel, trace Silt, damp.
5	-5	3	4-6	0.6	2 3 3 4	6	NA		
		4	6-8	1.2	6 6 11 18	17	NA		Gray-brown fine to medium SAND, little coarse Sand, little fine to medium Gravel, trace Silt, damp.
		5	8-10	1.2	10 20 12 9	32	NA		As above, moist to wet at bottom of sample.
10	-10	6	10-12	1.3	5 3 3 5	6	NA		Orange-brown fine SAND, trace Silt, saturated. Orange-brown fine to medium SAND, trace coarse Sand, trace fine to medium Gravel, trace Silt, saturated.
		7	12-14	1.0	4 5 7 12	12	NA		Orange-brown fine to coarse SAND, little fine to medium Gravel, trace Silt, saturated.
15	-15	8	14-16	1.3	16 12 7 5	19	NA		Gray-brown fine to medium SAND, little coarse Sand, trace fine Gravel, trace Silt, saturated.

Well/Boring Construction



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Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Proposed well construction is shown for review.

Client: Kalamazoo River Study Group

Well/Boring ID: **MW-09 Proposed**

Site Location:
Plainwell, Michigan

Borehole Depth: 26' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		9	16-18	0.7	13 12 7 7	19	NA		Gray-brown fine to medium SAND, little coarse Sand, trace fine Gravel, trace Silt, saturated. Gray-brown coarse SAND and fine GRAVEL, trace fine to medium Sand, saturated.	
		10	18-20	1.7	6 6 3 3	9	NA		Gray-brown fine to medium SAND, little coarse Sand, trace fine to medium Gravel, loose, saturated.	
20	-20	11	20-22	1.7	2 3 6 7	9	NA			
		12	22-24	1.7	4 4 4 7	8	NA			
25	-25	13	24-26	1.2	2 2 2 4	4	NA			
30	-30									
35	-35									

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Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Proposed well construction is shown for review.

Date Start/Finish: 11/11/2008
Drilling Company: MATECO
Driller's Name: Gary Swift, John Olson
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" ID
Rig Type: CME-55
Sampling Method: 2" x 2' Split Spoon

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 16' bgs
Surface Elevation: NA

Descriptions By: Ron Kuhn

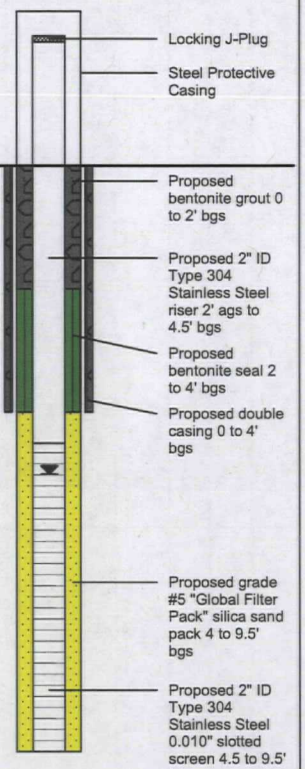
Well/Boring ID: **MW-10 Proposed**

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	1	0-2	1.3	2 3 4 4	7	NA		Dark brown Organic SILT, trace fine Sand, trace Organics, damp. Orange-brown fine to medium SAND, little coarse Sand, trace fine to medium Gravel, trace Silt, loose, damp.
		2	2-4	1.0	1 1/ 12" 1	1	NA		Gray-brown grading to dark gray Silty CLAY, trace Organics (highly degraded), damp.
5	-5	3	4-6	1.0	2 1 1 1	2	NA		Dark gray-brown fine SAND, trace to little Silt, trace Shells, saturated.
		4	6-8	1.1	NA	NA	NA		Light gray-brown Silty fine to medium GRAVEL, little fine to coarse Sand, loose, saturated. Light gray calcareous discoloration throughout.
		5	8-10	0.4	7 5 13 8	18	NA		As above, poor recovery due to coarse Gravel in tip of shoe.
10	-10	6	10-12	0.8	7 4 4 7	8	NA		Light gray-brown fine to medium GRAVEL, little fine to coarse Sand, trace Silt, saturated. Light gray calcareous Silt throughout.
		7	12-14	0.9	4 5 7 9	12	NA		Dark gray-brown fine to coarse SAND, little fine to medium Gravel, trace Silt, loose, saturated.
15	-15	8	14-16	0.7	3 4 4 6	8	NA		

Well/Boring Construction



ARCADIS
Infrastructure, environment, facilities

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Proposed well construction is shown for review.

Date Start/Finish: 11/11/2008
Drilling Company: MATECO
Driller's Name: Gary Swift, John Olson
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" ID
Rig Type: CME-55
Sampling Method: 2" x 2' Split Spoon

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 14' bgs
Surface Elevation: NA

Descriptions By: Ron Kuhn

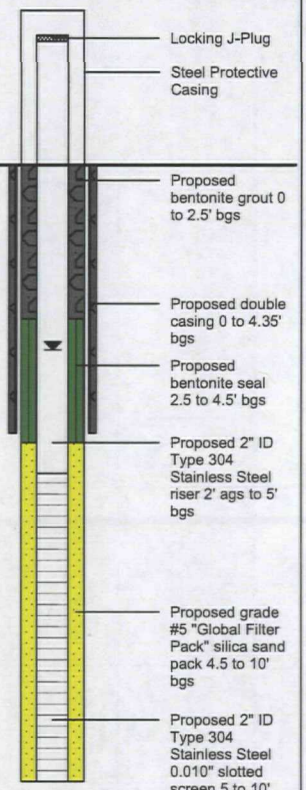
Well/Boring ID: **MW-11 Proposed**

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	1	0-2	1.3	2 3 5 9	8	NA		Dark brown Organic SILT, trace Organics, damp. Gray Silty CLAY, moist. Brown fine to medium SAND, trace Shells, loose, moist.
		2	2-4	1.6	2 2 2 2	4	NA		Gray Silty CLAY, trace Organics, damp. Light brown fine SAND, trace Silt, moist. Dark gray Silty CLAY, trace highly degraded Organics, odor, moist.
5	-5	3	4-6	0.7	1 1 1 1	2	NA		Gray-brown fine to medium SAND, trace coarse Sand, trace Silt, trace Shells, saturated.
		4	6-8	0.5	1 1 1 1	2	NA		As above, Little Silt.
		5	8-10	0.6	3 3 4 6	7	NA		Gray-brown fine to medium SAND, trace coarse Sand, trace fine to medium Gravel, trace light gray Silt in tip of sampler, trace Shells, loose, saturated.
10	-10	6	10-12	1.0	7 4 7 6	11	NA		Dark gray-brown fine to coarse SAND, little fine Gravel, loose, saturated.
		7	12-14	0.7	3 3 3 3	6	NA		Gray-brown fine to coarse SAND, trace fine to medium Gravel, trace Silt, loose, saturated.
15	-15								

Well/Boring Construction



ARCADIS
Infrastructure, environment, facilities

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Proposed well construction is shown for review.

Date Start/Finish: 11/11/2008
Drilling Company: MATECO
Driller's Name: Gary Swift, John Olson
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" ID
Rig Type: CME-55
Sampling Method: 2" x 2' Split Spoon

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 18' bgs
Surface Elevation: NA

Descriptions By: Ron Kuhn

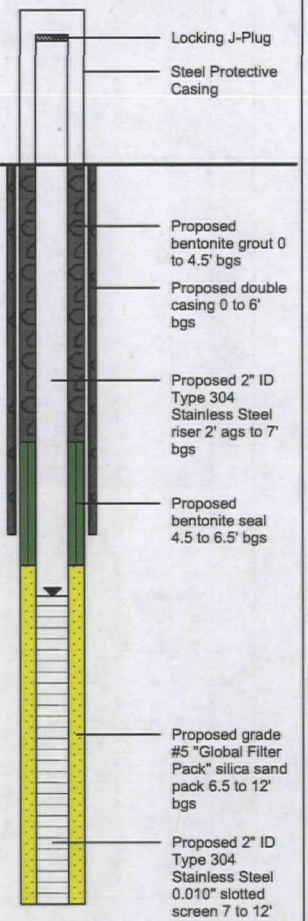
Well/Boring ID: **MW-13 Proposed**

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	1	0-2	1.4	2 2 1 2	3	NA		Dark brown Organic SILT, trace Organics, damp.
									Orange-brown fine to medium SAND, little coarse Sand, trace fine Gravel, loose, damp.
									Gray-brown Clayey SILT, trace fine Sand, damp.
									Gray-brown fine SAND, trace Silt, damp.
		2	2-4	0.4	2 2 2 2	4	NA		Olive-brown Silty CLAY, trace higly degraded natural Organics, moist.
5	-5	3	4-6	0.7	1 1 1 1	2	NA		As above, grading to dark gray-brown in color at 4.5' bgs, gray-brown fine to medium Sand seam at 4.5' bgs, moist.
		4	6-8	0.6	1 1 4 5	5	NA		Gray-brown fine to medium GRAVEL, little fine to coarse Sand, trace light gray (calcareous) Silt throughout, loose, saturated.
		5	8-10	0.6	4 4 7 9	11	NA		
10	-10	6	10-12	0.7	7 9 14 15	23	NA		As above, trace light gray Silt discoloration, gray calcareous deposits on gravel.
		7	12-14	0.2	5 6 8 10	14	NA		GRAVEL in tip of shoe.
15	-15	8	14-16	0.9	3 4 6 6	10	NA		Gray-brown fine to coarse SAND, little fine to medium Gravel, trace Silt, loose, saturated.

Well/Boring Construction



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Proposed well construction is shown for review.

Client: Kalamazoo River Study Group

Well/Boring ID: **MW-13 Proposed**

Borehole Depth: 18' bgs

Site Location:
Plainwell, Michigan

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		9	16-18	0.5	4 7 3 5	10	NA		Gray-brown fine to medium GRAVEL, little fine to coarse Sand, trace Silt, loose, saturated.	
20	-20									
25	-25									
30	-30									
35	-35									

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Proposed well construction is shown for review.

Date Start/Finish: 11/10/2008
Drilling Company: MATECO
Driller's Name: Gary Swift, John Olson
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" ID
Rig Type: CME-55
Sampling Method: 2" x 2' Split Spoon

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 16' bgs
Surface Elevation: NA

Descriptions By: Ron Kuhn

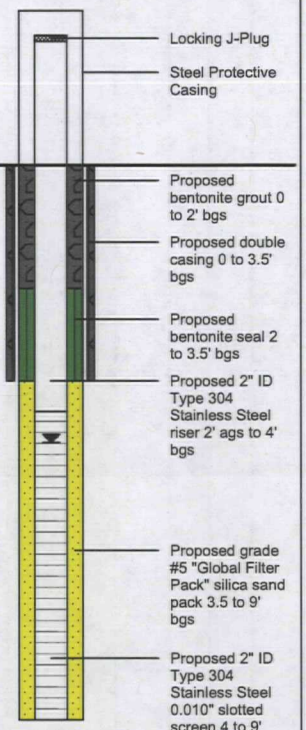
Well/Boring ID: **MW-14 Proposed**

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	1	0-2	1.7	2 2 2 2	4	NA		Dark brown SILT, trace fine Sand, trace Organics (Roots), damp.
									Brown fine to medium SAND, trace Silt, loose, damp.
									Light gray Clayey SILT, damp.
									Dark brown Organic SILT, trace Organics (Roots), damp.
		2	2-4	1.3	1 1 1 1	2	NA		Dark brown Silty fine SAND, trace Organics (highly degraded), moist to wet. at 2': Wet.
									Gray-brown fine SAND, trace medium to coarse Sand, trace Silt, wet.
									Brown SILT, trace fine Sand, wet.
5	-5	3	4-6	1.6	1 1 1 2	2	NA		Light gray-brown fine SAND, little Silt, trace medium to coarse Sand, trace fine to medium Gravel, saturated. (Light gray SILT in Sand/Gravel matrix).
		4	6-8	1.0	4 4 4 4	8	NA		Gray-brown fine to coarse SAND, trace fine to medium Gravel, trace Silt, saturated.
		5	8-10	1.0	NA	NA	NA		As above, grading to dark gray at 8.7' bgs.
10	-10	6	10-12	0.9	2 3 3 4	6	NA		Dark gray fine to medium GRAVEL, little fine to coarse Sand, trace Silt, saturated.
		7	12-14	1.0	2 3 3 4	6	NA		
15	-15	8	14-16	0.7	3 3 3 5	6	NA		

Well/Boring Construction



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Proposed well construction is shown for review.

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Date Start/Finish: 11/11/2008
Drilling Company: MATECO
Driller's Name: Gary Swift, John Olson
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" ID
Rig Type: CME-55
Sampling Method: 2" x 2' Split Spoon

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 18' bgs
Surface Elevation: NA

Descriptions By: Ron Kuhn

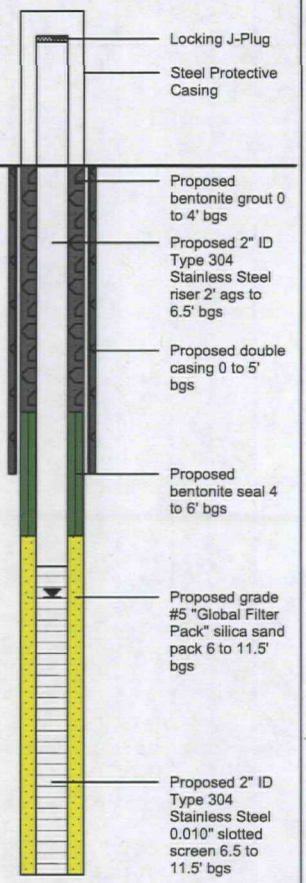
Well/Boring ID: **MW-15 Proposed**

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	1	0-2	1.5	1 2 2 3	4	NA		Dark brown Organic SILT, trace moderately degraded Organics, damp.
									Gray-brown Clayey SILT, trace fine Sand, trace Organics, damp.
									Orange-brown fine SAND, trace Silt, damp.
		2	2-4	0.9	2 2 2 3	4	NA		Orange fine SAND, trace Silt, trace medium Gravel, moist.
5	-5	3	4-6	0.5	1 2 3 3	5	NA		As above, Saturated.
		4	6-8	0.8	3 3 4 4	7	NA		Gray-brown fine to medium SAND, little coarse Sand, trace fine to medium Gravel, trace Silt, loose, saturated.
		5	8-10	0.8	3 5 4 4	9	NA		Gray-brown fine to coarse SAND, little fine to medium Gravel, trace Silt, saturated.
10	-10	6	10-12	1.2	3 4 4 7	8	NA		
		7	12-14	0.6	3 6 4 4	10	NA		As above, grading to dark gray at 12.4' bgs.
15	-15	8	14-16	0.4	2 3 3 4	6	NA		Dark gray fine GRAVEL, little fine to coarse Sand, saturated.

Well/Boring Construction



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Proposed well construction is shown for review.

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Client: Kalamazoo River Study Group

Well/Boring ID: **MW-15 Proposed**

Site Location:
Plainwell, Michigan

Borehole Depth: 18' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		9	16-18	0.0	3 3 3 4	6	NA		No recovery - slough.	
20	-20									
25	-25									
30	-30									
35	-35									

ARCADIS
Infrastructure, environment, facilities

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Proposed well construction is shown for review.